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# THE UNITED STATES OF AMERICA

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UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office

October 28, 2003

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A FILING DATE.

APPLICATION NUMBER: 60/409,690

FILING DATE: September 10, 2002

RELATED PCT APPLICATION NUMBER: PCT/US03/28208

By Authority of the  
COMMISSIONER OF PATENTS AND TRADEMARKS



*M. K. Hawkins*  
M. K. HAWKINS  
Certifying Officer

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31132 U.S. PTO

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Approved for use through 10/31/2002 OMB 0651-0032  
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

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**PROVISIONAL APPLICATION FOR PATENT COVER SHEET**

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

INVENTOR(S)					
Given Name (first and middle [if any])		Family Name or Surname		Residence (City and either State or Foreign Country)	
Stefano A.		Livi		Ellicott City, Maryland	
<input type="checkbox"/> Additional inventors are being named on the _____ separately numbered sheets attached hereto					
TITLE OF THE INVENTION (280 characters max)					
Strofio: A Spectrograph Time-of-Flight System for Low-energy Neutral Particles					
Direct all correspondence to: CORRESPONDENCE ADDRESS					
<input type="checkbox"/> Customer Number				Place Customer Number Bar Code Label here	
OR Type Customer Number here					
<input checked="" type="checkbox"/> Firm or Individual Name		Office of Patent Counsel			
Address		The Johns Hopkins University/Applied Physics Laboratory			
Address		11100 Johns Hopkins Road			
City		Laurel	State	MD	ZIP 20723-6099
Country		U.S.A.	Telephone	(240) 228-5644	Fax (240) 228-5254
ENCLOSED APPLICATION PARTS (check all that apply)					
<input checked="" type="checkbox"/> Specification		Number of Pages	1	<input type="checkbox"/> CD(s), Number	
<input type="checkbox"/> Drawing(s)		Number of Sheets		<input type="checkbox"/> Other (specify)	
<input type="checkbox"/> Application Data Sheet. See 37 CFR 1.76					
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT (check one)					
<input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27.				FILING FEE AMOUNT (\$)	
<input type="checkbox"/> A check or money order is enclosed to cover the filing fees					
<input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number		01-2218		\$80.00	
<input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.					
The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.					
<input checked="" type="checkbox"/> No.					
<input type="checkbox"/> Yes, the name of the U.S. Government agency and the Government contract number are _____					

Respectfully submitted,

SIGNATURE

TYPED or PRINTED NAME

Benjamin Y. Roca

TELEPHONE

(240) 228-5644

Date

9/9/02

REGISTRATION NO.

50,166

(if appropriate)

Docket Number:

1880-SPL

**USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT**

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Provisional Application, Assistant Commissioner for Patents, Washington, D.C.

P18SMALL/REV05

JHU/APL Docket No. 1880-SPL PRV

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Stefano A. Livi

For: Strofio: A Spectrograph Time-of-Flight System for Low-energy Neutral Particles

Assistant Commissioner for Patents  
Box Provisional Application  
Washington, D.C. 20231

## EXPRESS MAIL CERTIFICATE

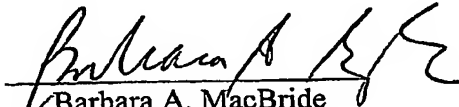
"Express Mail" label number EL685618005US

Date of Deposit: 10 September 2002

I hereby certify that the following attached provisional application as identified above consisting of:

1. Postcard receipt
2. Provisional Application for Patent Cover Sheet (in duplicate) (1 page)
3. Provisional Application (1 pp.)

is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to Assistant Commissioner for Patents, Box Provisional Application, Washington, D.C. 20231.

  
Barbara A. MacBride

Docket No. 1880-SPL PRV

Title: A Spectrograph Time-of-Flight System for Low-energy Neutral Particles

Inventors: Stefano A. Livi

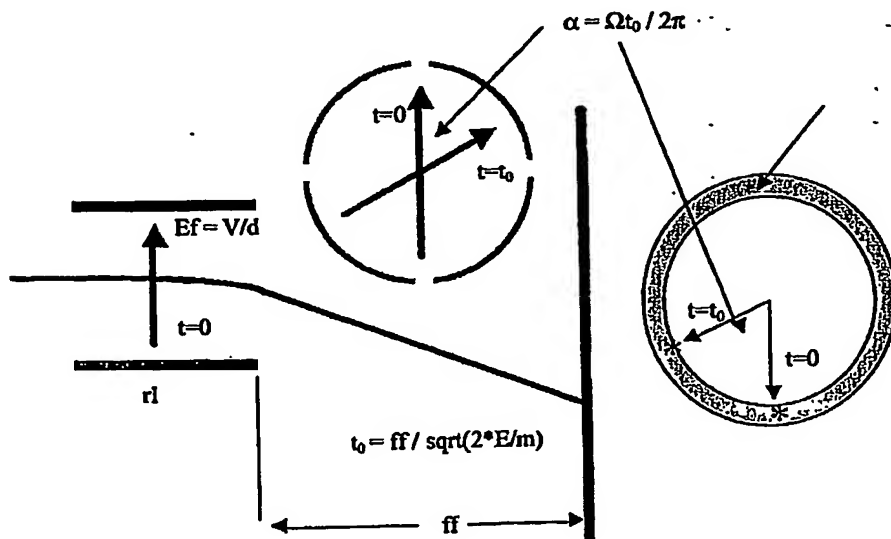
**4. DESCRIPTION OF THE TECHNOLOGY:**

- Written Description (Describe the invention in such detail that a person moderately skilled in the art may understand how to make and use it. In addition, attach any memos, etc. which show or describe the invention and identify them positively (i.e., by date and office symbol) below.)

Strofio is a novel type of mass spectrometer, where the mass of the particle is determined by the time of flight through a given region. The start time is imprinted on the trajectory of the particle by a radio frequency electric field, that bends the trajectory in a given plane, and the stop time is the time when the particle reaches the detector.

☐ Check here if additional sheets/material are attached. (Go to Description Continuation Sheet)

- Sketch or drawing of the invention. (Staple your sketch to the printed copy of this form.)



SN 60409690 Mail Date 9/10/02

- ☐ Non-English Specification
- ☒ Specification contains drawing(s) on page(s) 1 or table(s) \_\_\_\_\_
- ☐ Landscape orientation of text    ☐ Specification    ☐ Claims    ☐ Abstract
- ☐ Handwritten    ☐ Specification    ☐ Claims    ☐ Abstract
- ☐ More than one column    ☐ Specification    ☐ Claims    ☐ Abstract
- ☐ Improper line spacing    ☐ Specification    ☐ Claims    ☐ Abstract
- ☐ Claims not on separate page(s)
- ☐ Abstract not on separate page(s)
- ☐ Improper paper size -- Must be either A4 (21 cm x 29.7 cm) or 8-1/2"x 11"
- ☐ Specification page(s) \_\_\_\_\_    ☐ Abstract
- ☐ Drawing page(s) \_\_\_\_\_    ☐ Claim(s)
- ☐ Improper margins
- ☐ Specification page(s) \_\_\_\_\_    ☐ Abstract
- ☐ Drawing page(s) \_\_\_\_\_    ☐ Claim(s)
- ☐ Not reproducible
- Reason
- ☐ Paper too thin
- ☐ Glossy pages
- ☐ Non-white background
- Section
- ☐ Specification page(s) \_\_\_\_\_
- ☐ Drawing page(s) \_\_\_\_\_
- ☐ Abstract
- ☐ Claim(s)
- ☐ Drawing objection(s)
- ☐ Missing lead lines, drawing(s) \_\_\_\_\_
- ☐ Line quality is too light, drawing(s) \_\_\_\_\_
- ☐ More than 1 drawing and not numbered correctly
- ☐ Non-English text, drawing(s) \_\_\_\_\_
- ☐ Excessive text, drawing(s) \_\_\_\_\_
- ☐ Photographs capable of illustration, drawing(s) \_\_\_\_\_